REMARKS

Upon entry of this Response, claims 1, 4-9, 11-16, 18-20, and 27-28 remain pending in the present patent application. Claim 1 has been amended herein. Applicant requests reconsideration of the pending claims in view of the following remarks.

In item 1 of the Office Action, claims 1, 4, 6, 7, 9, 11, 13, 15-18, 20-23, and 26 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent Publication 2002/0073304 A1 filed by Marsh et al. (hereafter *"Marsh"*), and further in view of U.S. Patent 6,516,346 issued to Asco et al. (hereafter *"Asco"*), and further in view of U.S. Patent 6,742,025 issued to Jennery et al. (hereafter *"Jennery"*). A prima facie case of obviousness is established only when the prior art teaches or suggests all of the elements of the claims. MPEP §2143.03, In re Rijckaert, 9 F.3d 1531, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). As an initial matter, Applicants note that claims 17 and 21-23 included in the rejection had previously been canceled in the present application. Accordingly, Applicants assert that the rejection of these claims is moot. In addition, Applicants assert that the rejection of claims 1, 4, 6, 7, 9, 11, 13, 15, 16, 18, and 20 is improper as the cited references fail to show or suggest each of the elements of such claims. Accordingly, Applicants request that the rejection of these claims be withdrawn.

To begin, claim 1 has been amended herein so as to recite as follows:

1.   A computer system, comprising:
a central processor unit (CPU);
a programmable read only memory (ROM) coupled to said CPU, said ROM containing a digital image;
wherein said CPU programs its ROM during a system initialization *without execution of an operating system by the CPU*, wherein the system initialization further comprises a booting of said system;
a connection to a network and wherein, during the system initialization, said system sends a message to a server coupled to the network to determine whether an upgraded image is available for said ROM; and
wherein, during the system initialization, said system receives an upgraded image and flashes said ROM with the upgraded image if the upgraded image is available for said ROM. (Emphasis Added)

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As set forth above, the CPU programs its ROM during a system initialization without execution of an operating system by the CPU, where the system initialization further comprises the booting of said system. With respect to at least this element, the Office Action states:

> In regard to claim 1, **Marsh** discloses: ...
> "...*wherein said CPU programs its ROM during a system initialization*
> ... *wherein the system initialization further comprises a booting of said system* ..." (E.g., see Fig. 4 & Page 5, [0048]), wherein, the flash application designated in the modified boot image, selected upon the next boot of the computer (system initialization), is erasing and then programming the non-volatile memory or ROM.
> "...*without execution of an operating system associated with the CPU*...*"* (E.g., see Fig. 4 & Page 4, [0038]), wherein, the firmware patch is unique in that it contains the execution code necessary to perform a firmware upgrade before the operating system is loaded and executed. (Office Action mailed 10/20/2005, pages 4-5.)

In this respect, the Examiner contends that Marsh discloses programming a ROM during system initialization without the execution of an operating system in the CPU.

In the previous Response filed with the RCE in the present application, Applicants noted that Marsh failed to show or suggest programming a ROM during system initialization without the execution of an operating system by the CPU. In the current Office Action, the Examiner disagreed stating as follows:

> **"Prior Art's Arguments – Rejections**
>
> 2. Applicant's arguments filed October 3rd, 2005, in particular on page 6-8, have been fully considered but they are not persuasive. For example, (A) In regard to the argument that *Marsh* does not show or suggest "...without execution of an operating system associated with the CPU...", (page 7, first paragraph of the amendment and response) and as the instant application has recited and/or indicated in claims 1, 9, 16 and 27 as amended, the Examiner respectfully disagrees. *Marsh* explicitly discloses: "...the firmware patch is unique in that it contains the execution code necessary to perform a firmware upgrade..." (E.g., see Fig. 4

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& Page 4, [0038]), wherein, this procedure takes place before the operating system is loaded and executed.

Additionally, Marsh first teaches that the operating system resides in the RAM designate executables (Figure 2, Page 3, paragraph [0033]), wherein the system loader directs the microprocessor (CPU) to load the bootable kernel (450) and the operating system (434). Marsh continues to teach an improved method for implementing firmware upgrades (Paragraph [0036]), wherein, he discloses an exemplary boot image in accordance with his invention, wherein the replacement bootable kernel does not rely on the present firmware version and operating system (Figure 4, Paragraph [0038]). Thus, Marsh certainly discloses flashing an upgrade, wherein the CPU programs its ROM, without execution of an operating system associated with the CPU. Therefore, the examiner maintains the rejection in regard to ammendment.
(B) Accordingly, the dependent claims to independent claims 1, 9, 16 and 27 are rejected at least for the reasons disclosed hereinabove." (Office Action of 10-20-05, pages 2-3.)

Applicants respectfully disagree with the above contentions. In particular, *Marsh* specifically teaches an approach for upgrading firmware in a computer system in which an operating system is executed in order to facilitate the upgrade. In particular, *Marsh* specifically discusses what constitutes an operating system as set forth in paragraphs [0004] and [0005]. In this respect, *Marsh* states:

"[0004] An operating system is one of the most important programs on a PC. Most general-purpose computers utilize an operating system for running other programs. Operating systems perform basic tasks, such as recognizing input from the keyboard, sending output to the display monitor, managing directories and files on fixed disks, and controlling peripheral devices such as disk drives and printers. Operating systems provide a software platform on top of which other programs, called applications, may run. Applications are typically written to run on top of a particular operating system. For PCs, disk operating system (DOS), operating system 2 (OS/2), Windows, and Linux are some of the most popular operating systems.

[0005] **A kernel is the central module of an operating system. It is the part of the operating system that loads first, and it remains in RAM**. Because the kernel resides in RAM, it is desirable for the kernel to be as small as possible while still providing all the essential services required by other parts of the

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operating system and applications. Typically, the kernel is
responsible for memory management, process and task
management, and disk management." (Emphasis Added)

Thus, a kernel is a "central module" of an operating system as specifically stated
by *Marsh*. In addition, at paragraph [0038] cited by the Examiner for the proposition that
a ROM is updated without the execution of an operating system, *Marsh* states:

"[0038] In a preferred embodiment, the system loader configuration
file 420 of the modified boot image 480 may be configured to direct
the system loader 410 to execute the firmware patch 500 upon the
next boot request. The firmware patch 500 differs from prior art
software patches, such as the exemplary typical software patch 440
(FIG. 2) for at least the reason that prior art software patches are
reliant upon the current command infrastructure as defined by the
present firmware version and operating system. The firmware patch
500 is unique in that it contains the execution code necessary to
perform a firmware upgrade. Specifically, the firmware patch 500
contains a bootable kernel, firmware update logic, and a non-
volatile memory interface. The bootable kernel may further
comprise a system loader interface and reboot logic."

Thus, as expressly described by *Marsh*, the firmware patch contains a "bootable
kernel" which is an operating system. In this respect, the bootable kernel also
comprises for example, a system loader interface and "reboot logic". The reboot logic is
necessary since the operating system (bootable kernel) is loaded into the RAM and
thus, after an upgrade of firmware is performed, the computer must be rebooted in order
to reload the operating system after the upgrade is performed. It appears that the
approach of *Marsh* is to employ a substitute operating system for upgrading the ROM of
a computer system. A substitute operating system is an operating system nonetheless.

The approach as set forth in claim 1 is advantageous as the ROM is upgraded
without the need to reboot the computer system. Specifically, if the operating system
were loaded such as is the case with *Marsh*, then a reboot would be necessary in order
to operating the computer with the new firmware in relation to an operating system
executed. Thus, the approach as set forth in the claims of the present invention
advantageously facilitates the upgrade of ROM in the computer system without forcing a
user to wait for the system to automatically reboot and therefore resulting in an
annoying delay. In addition, given that *Marsh* teaches the use of an operating system to

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effect the upgrade of a ROM, *Marsh* teaches away from the concept of upgrading the ROM without the execution of an operating system.

Therefore, Applicants assert that the cited combination of references fails to show or suggest each of the elements of claim 1. In addition, Applicants assert that the cited combination of references fails to show or suggest each of the elements of claims 9 and 16 to the extent that such claims incorporate subject matter similar in scope with that of claim 1 described above. Accordingly, Applicants request that the rejection of claims 1, 9, and 16 be withdrawn. In addition, Applicants request that the rejection of claims 4, 6, 7, 11, 13, 15, 18, and 20 be withdrawn as depending from claims 1, 9, or 16.

In addition, in item 16 of the Office Action, claims 5, 12, 19, 24, and 25 stand rejected under 35 U.S.C. §103 as being unpatentable over Marsh, Asco, and Jennery as applied to claim 1, and further in view of U.S. Patent 6,594,757 issued to Martinez (hereafter "*Martinez*"). Claims 5, 12, and 19 ultimately depend from claims 1, 9, and 16. Accordingly, Applicants request that the rejection of these claims be withdrawn for the same reasons described above with respect to claims 1, 9, and 16. In addition, it is noted that claims 24 and 25 have been canceled herein thereby rendering the rejection of such claims moot. Accordingly, Applicants request that the rejection of claims 24 and 25 be withdrawn.

Next in item 22, claims 8 and 14 have been rejected under 35 U.S.C. §103 as being unpatentable over Marsh, Asco, and Jennery as applied to claim 1, and further in view of U.S. Patent 6,009,524 issued to Olarig et al. (hereafter "*Olarig*"). Claims 8 and 14 ultimately depend from claims 1, and 9, respectively. Accordingly, Applicants request that the rejection of claims 8 and 14 be withdrawn for the same reasons described above with respect to claims 1 and 9.

In addition, claims 27 and 28 appear to have been rejected under 35 U.S.C. §103 in view of Marsh, Asco, and Jennery. Applicants note that claim 27 incorporates subject matter similar in scope with that of claim 1 above. Also, claim 28 depends from claim 1. Accordingly, Applicants request that the rejection of claims 27 and 28 be withdrawn.

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CONCLUSION

Applicants respectfully request that all outstanding objections and rejections be withdrawn and that this application and all presently pending claims be allowed to issue. If the Examiner has any questions or comments regarding this response, the Examiner is encouraged to telephone the undersigned counsel of Applicants.

Respectfully submitted,

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